

SELECTABLE DECOUPLING CAPACITORS FOR INTEGRATED CIRCUIT AND METHODS OF USE

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Abstract of the Disclosure

Selectable capacitors are used to modify performance characteristics of functional circuit elements of an integrated circuit (IC). In one embodiment, the decoupling capacitors are implemented as additional or alternative mounting pads on a surface of the IC. At least one selectable capacitor is provided for each IC circuit element, such as a logic network, whose operational characteristic(s) is predicted to be and is actually identified as sub-optimal through IC testing, particularly following a process change, a mask shrink, operation of the IC at higher clock frequency, or the like. Expensive redesign is avoided by selectively coupling capacitors into the IC circuit element as needed, under control of selector logic that is responsive to control signals. Methods of operation, as well as application of the apparatus to an electronic assembly and an electronic system, are also described.

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